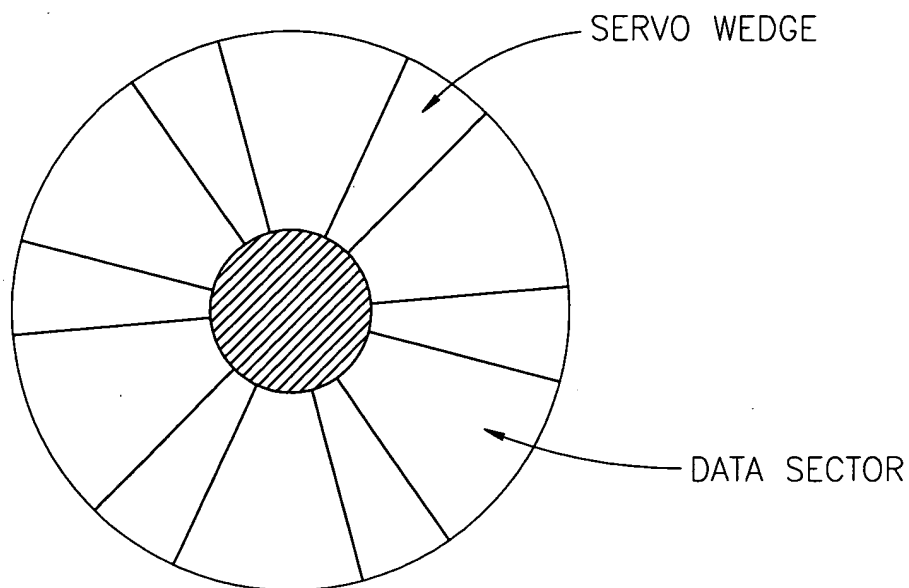


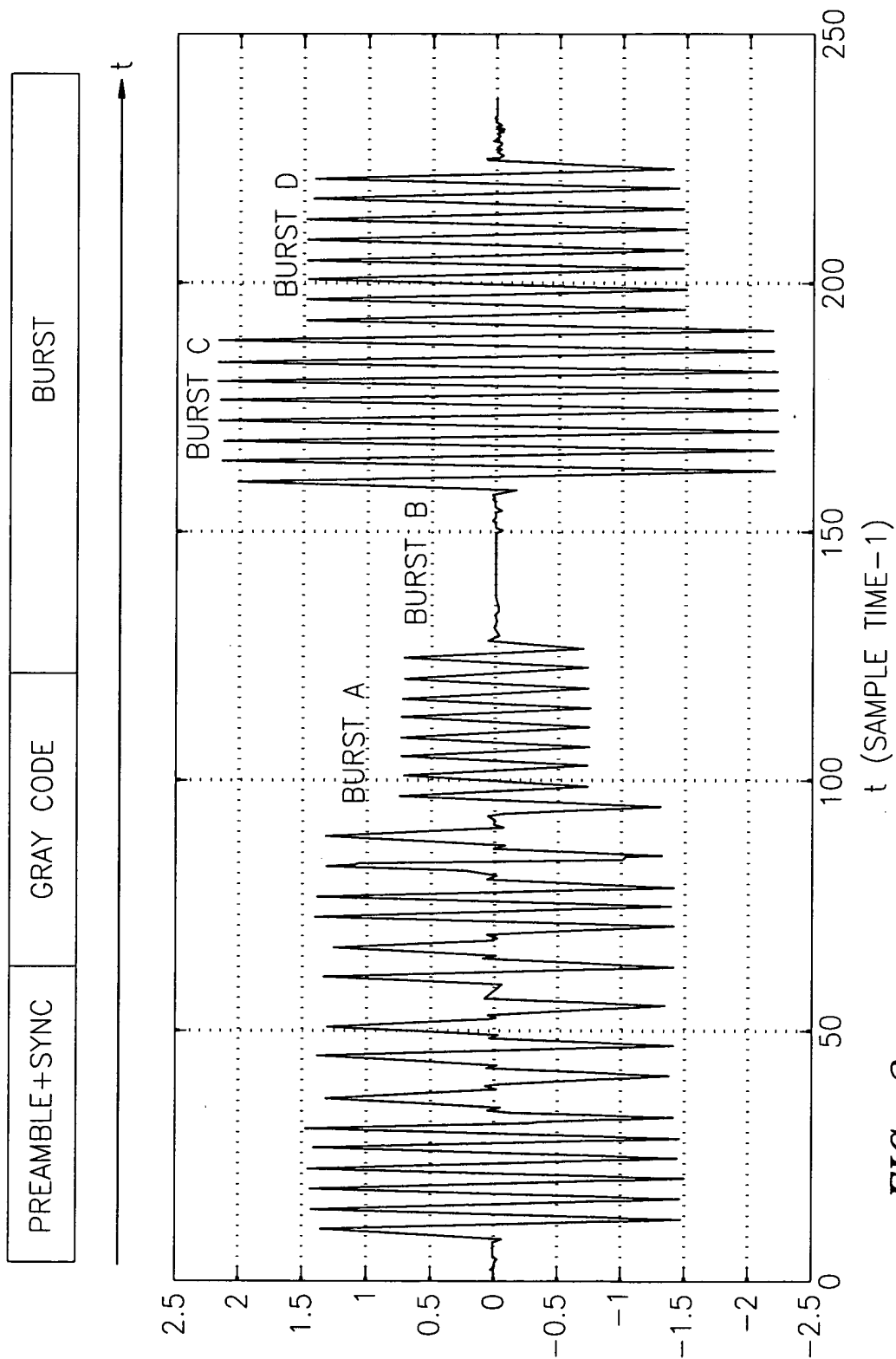
Serial No. 10/033,726      Docket No. 856063.728

Inventor(s): Angelo Dati et al.

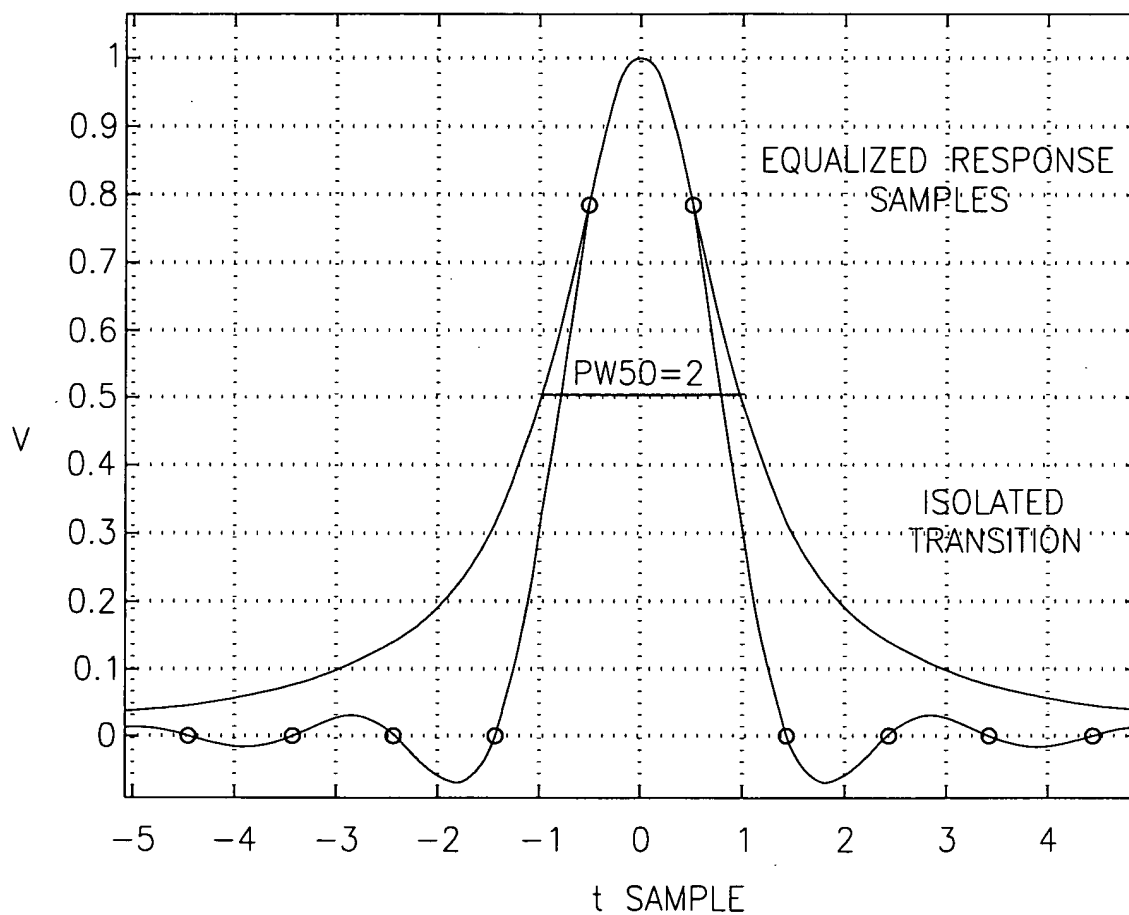
Express Mail No. EV530951224US      "REPLACEMENT SHEET"



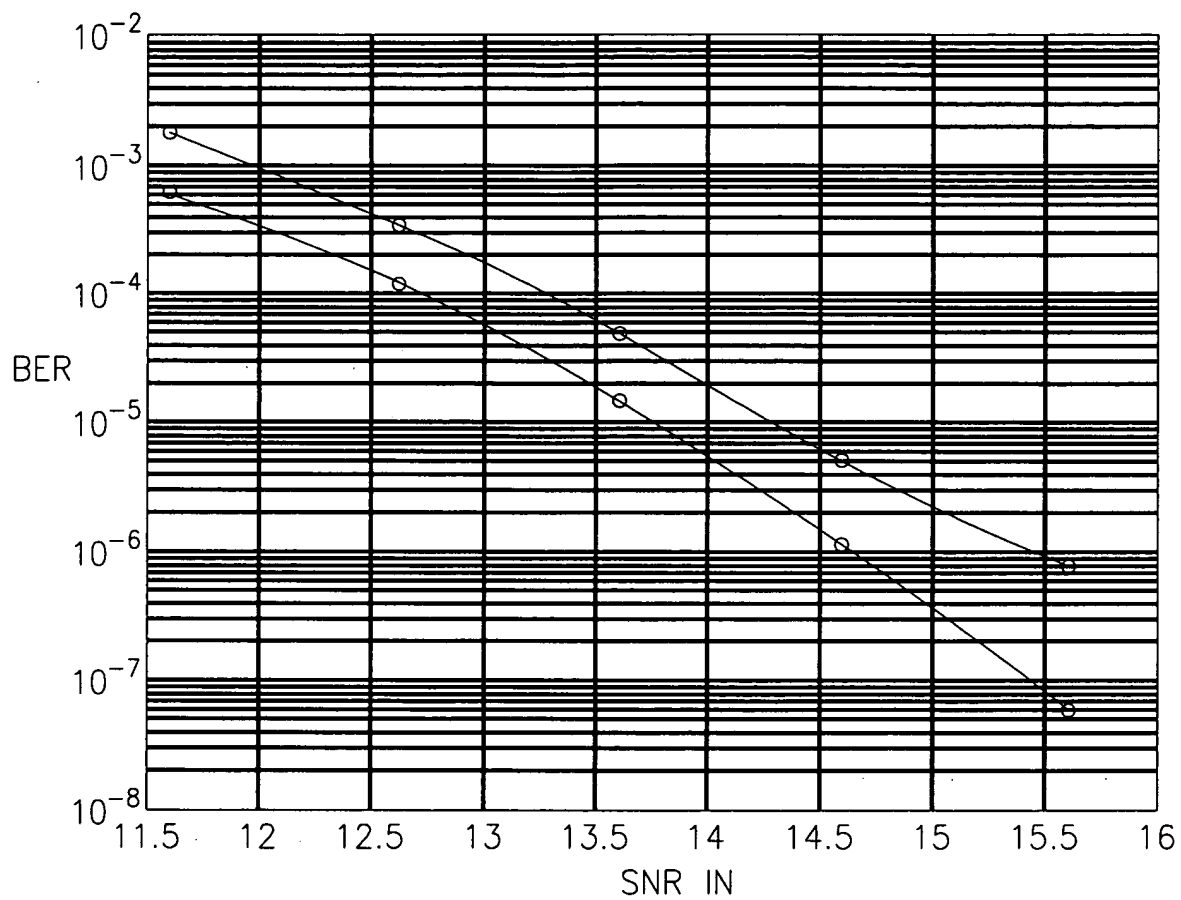
*FIG. 1*  
*(Prior Art)*



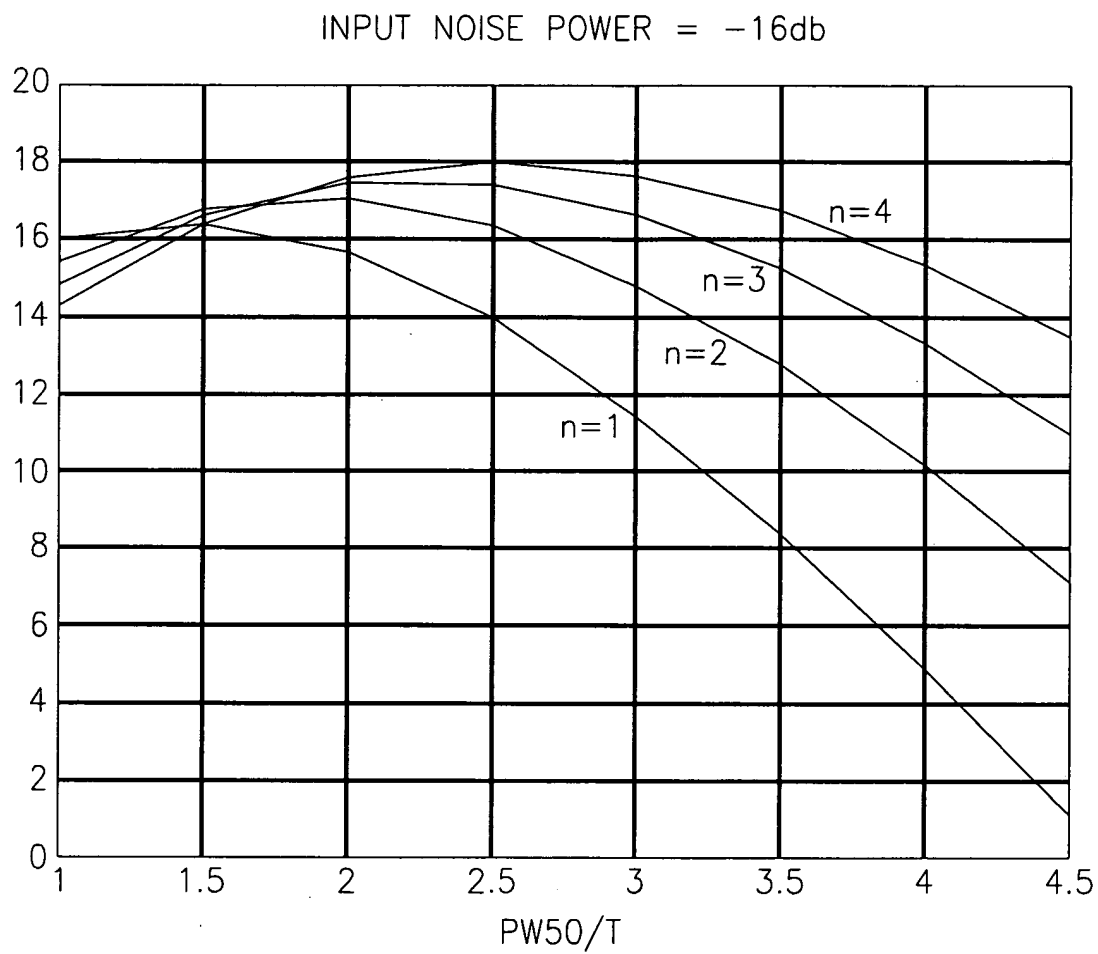
**FIG. 2**  
*(Prior Art)*



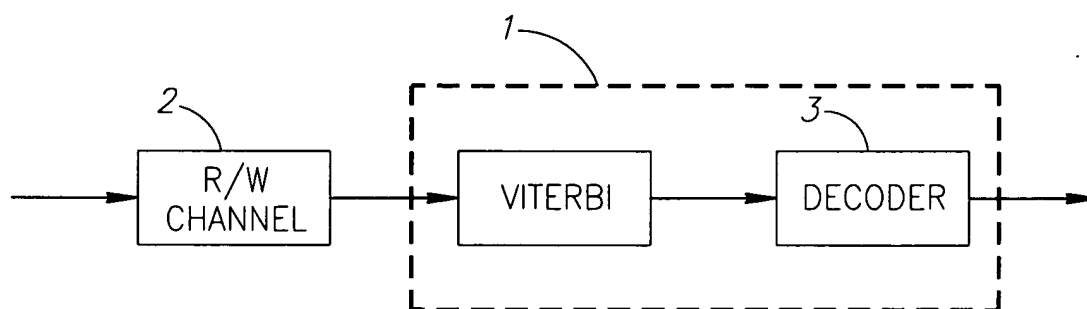
*FIG. 3*  
*(Prior Art)*



*FIG. 4*  
*(Prior Art)*



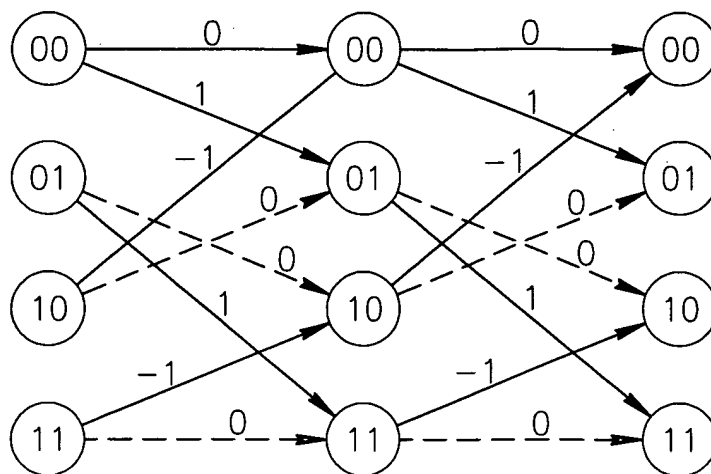
*FIG. 5*  
*(Prior Art)*



**FIG. 6A**

		4/12 GRAY FORMAT											
GRAY CODE		1	2	3	4	5	6	7	8	9	10	11	12
0000	TRACK 0												
0001	TRACK 1												
0011	TRACK 2												
0010	TRACK 3												
0110	TRACK 4												
0111	TRACK 5												
0101	TRACK 6												
0100	TRACK 7												
1100	TRACK 8												
1101	TRACK 9												
1111	TRACK 10												
1110	TRACK 11												
1010	TRACK 12												
1011	TRACK 13												
1001	TRACK 14												
1000	TRACK 15												
0000	TRACK 0												
0001	TRACK 1												

**FIG. 6**  
*(Prior Art)*



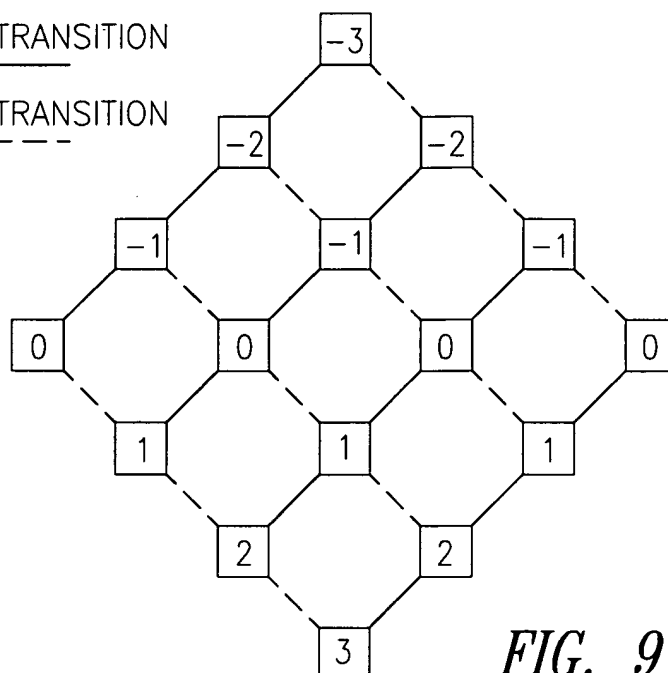
*FIG. 7*  
(Prior Art)

UNCODED 4 BIT WORD	CODED PATTERN
0000	001100110000
0001	001100110011
0010	001100000110
0011	001100000011
0100	000110001100
0101	000110011000
0110	001100001100
0111	001100011000
1000	000000110000
1001	000000110011
1010	000001100110
1011	000001100011
1100	000110000110
1101	000110000011
1110	000011000110
1111	000011000011

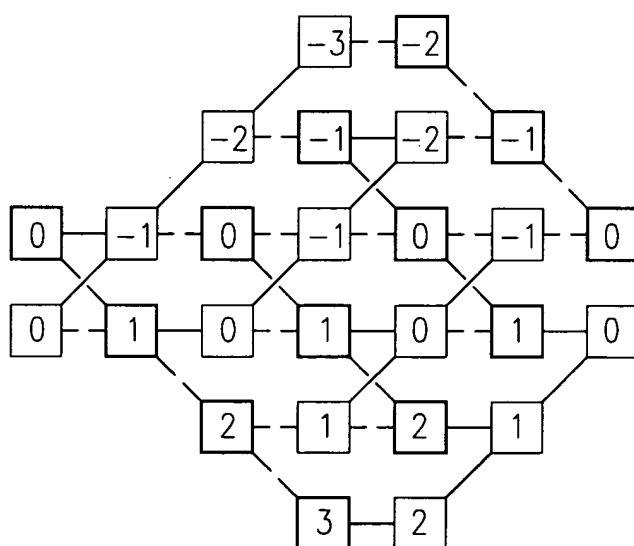
*FIG. 8*  
(Prior Art)

0-INDUCED TRANSITION

-----  
 1-INDUCED TRANSITION



*FIG. 9*



R RDS STATE R, '11' CHANNEL  
R RDS STATE R, '00' CHANNEL

*FIG. 10*



#### ENCODER

```
switch( gray_in ) {  
case 4'b0000: msn = 6'b001011:  
case 4'b0001: msn = 6'b001110:  
case 4'b0011: msn = 6'b011010:  
case 4'b0010: msn = 6'b010011:  
case 4'b0110: msn = 6'b010110:  
case 4'b0111: msn = 6'b011100:  
case 4'b0101: msn = 6'b001101:  
case 4'b0100: msn = 6'b011001:  
case 4'b1100: msn = 6'b110001:  
case 4'b1101: msn = 6'b010101:  
case 4'b1111: msn = 6'b110100:  
case 4'b1110: msn = 6'b100101:  
case 4'b1010: msn = 6'b101100:  
case 4'b1011: msn = 6'b100110:  
case 4'b1001: msn = 6'b100011:  
case 4'b1000: msn = 6'b101001:  
}  
  
assign  
cw_out={2'b{msn{5}},2'b{msn{4}},  
2'b{msn{2}},2'b{msn{1}},2'b{0}}};
```

*FIG. 11*

#### DECODER

```
assign cw_in={ msn{10}, msn{8},  
msn{6}, msn{4}, msn{2}, msn{0}}:  
  
switch( msn ) {  
case 6'b001011: gray_out = 4'b0000:  
case 6'b001110: gray_out = 4'b0001:  
case 6'b011010: gray_out = 4'b0011:  
case 6'b010011: gray_out = 4'b0010:  
case 6'b010110: gray_out = 4'b0110:  
case 6'b011100: gray_out = 4'b0111:  
case 6'b001101: gray_out = 4'b0101:  
case 6'b011001: gray_out = 4'b0100:  
case 6'b110001: gray_out = 4'b1100:  
case 6'b010101: gray_out = 4'b1101:  
case 6'b110100: gray_out = 4'b1111:  
case 6'b100101: gray_out = 4'b1110:  
case 6'b101100: gray_out = 4'b1010:  
case 6'b100110: gray_out = 4'b1011:  
case 6'b100011: gray_out = 4'b1001:  
case 6'b101001: gray_out = 4'b1000:  
default : gray_out = 4'b0000:  
}
```

*FIG. 12*

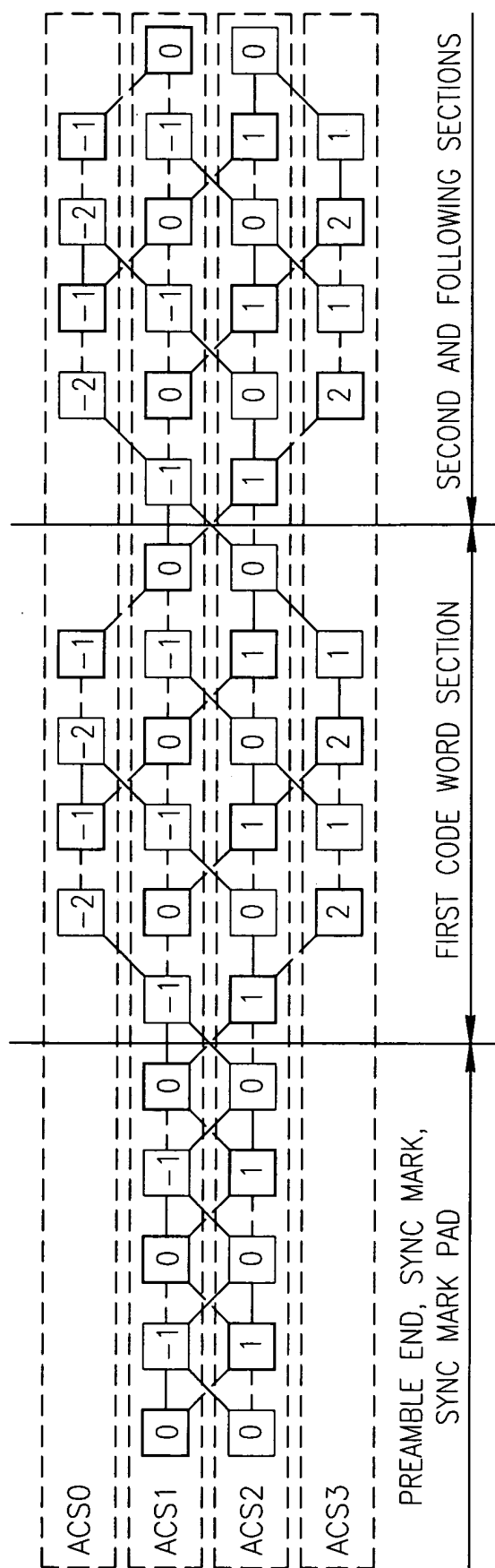
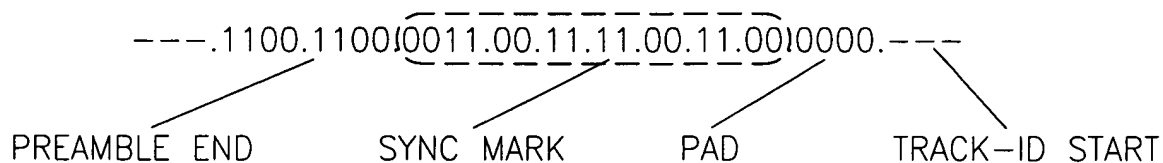
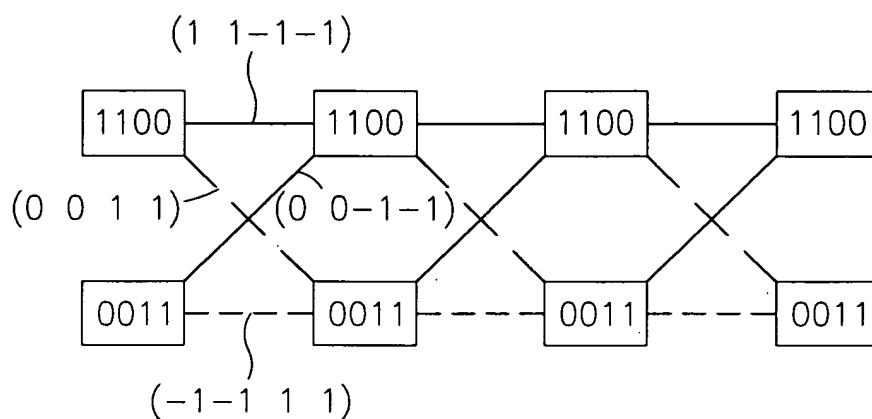


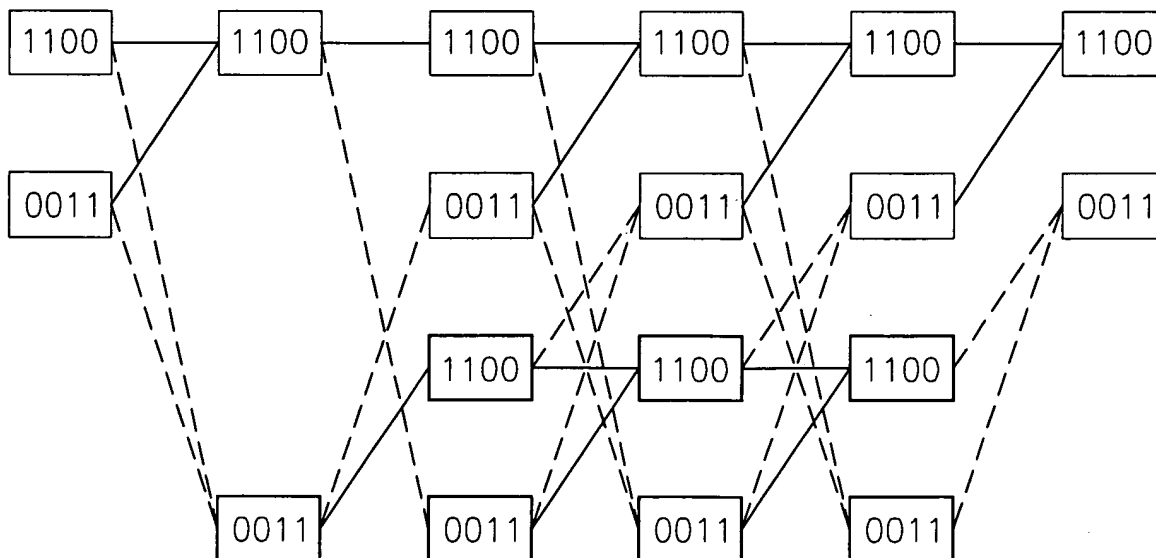
FIG. 13



*FIG. 14*



*FIG. 15*



*FIG. 16*